



# The Changing Landscape of Federal Innovation: Implications for the Navy

NWDC, 6 June 2012

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*Revolutionary Research . . . Relevant Results*

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O F F I C E O F N A V A L R E S E A R C H

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# What am I going to say?

- **Innovation as a strategic advantage**
- **Make you proud of ONR as an S&T Innovation Engine**
- **The rapidly changing landscape of *open* innovation across the Federal Government**
- **What might this mean for the Navy beyond S&T?**
- **Thoughts on a (window of) opportunity to lead**

# Invention vs Innovation

**Invention = working to create ideas**

**Innovation = putting ideas to work**



# Classic Innovation



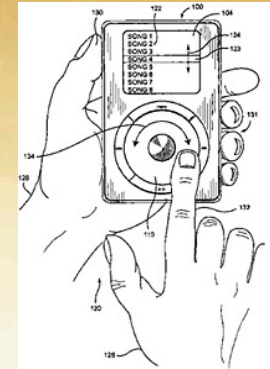
Apple

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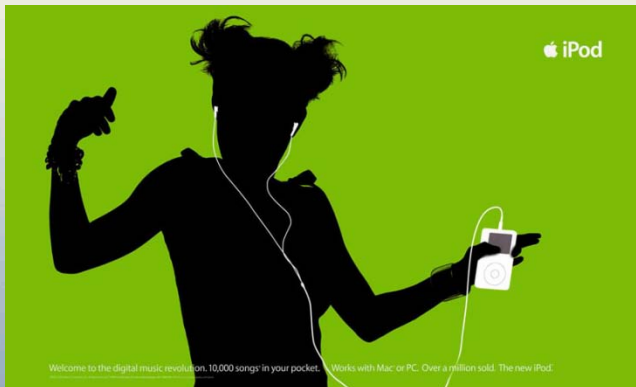
# Aspects of Apple Innovation



Industrial Design



Intellectual Property



Marketing



Product Integration

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# Who Invented the iPod?

A 23 year old englishman named Kane Kramer invented essential iPod along with DRM in 1979. He let his patent lapse.

The iPod internal design came from a company called PortaPlayer

The iPod interface and operating system came from a company called Pixo



# The Office of Naval Research

The **Office of Naval Research** invests in innovative operational concepts to develop the science and technology (S&T) that ensures our warfighters always have the **technological edge**.



**ONR Mission** — “to plan, foster, and encourage scientific research in recognition of its paramount importance to future Naval power and national security.”

- Public Law 588 of 1946

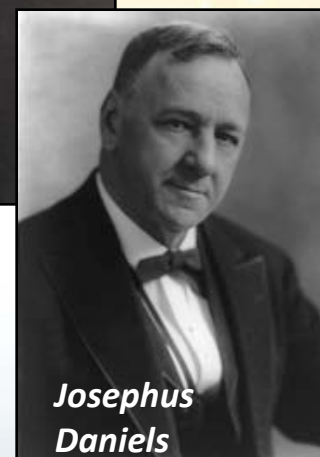
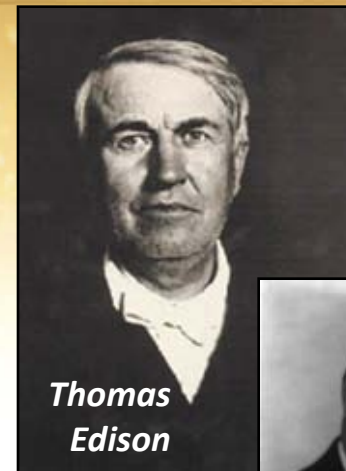
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# A Rich History

Naval Research Laboratory (*Appropriations Act, 1916*)

***"[Conduct] exploratory and research work...necessary... for the benefit of Government service, including the construction, equipment, and operation of a laboratory...."***



Office of Naval Research (*Public Law 588, 1946*)

***"... plan, foster, and encourage scientific research in recognition of its paramount importance as related to the maintenance of future naval power, and the preservation of national security.... "***

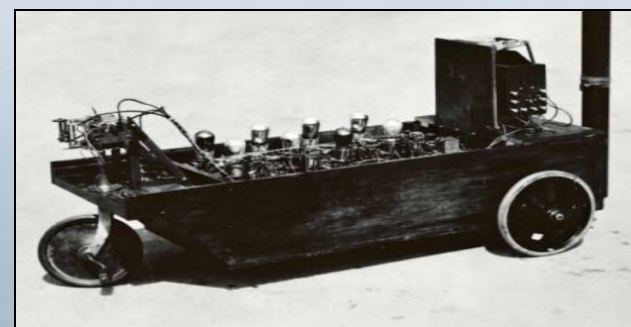


Transitioning S&T (*Defense Authorization Act, 2001*)

***"...manage the Navy's basic, applied, and advanced research to foster transition from science and technology to higher levels of research, development, test, and evaluation."***

# The First Unmanned Air Vehicle (UAV)

*U.S Navy Curtis, 1924*



# Innovative Naval Prototype (INP) Programs

- **Determined by DoN guidance, INPs are funded at ~12% of ONR Total Obligation Authority**
- **Purpose:**
  - Explore high-risk, game-changing technologies and advance the capabilities of the warfighter
  - Reduce the acquisition risk of disruptive technologies and capabilities
  - Deliver “The Next Big Thing”
- **Approved by VCNO, ASN (RDA) and APMC**
- **FY10 Innovative Naval Prototypes:**
  - Tactical Satellite (TACSAT) launched Sept. 27
- **Current Innovative Naval Prototypes:**
  - Persistent Littoral Undersea Surveillance (PLUS)
  - Sea Base Enablers (SBE)
  - Electromagnetic Railgun (EMRG)
  - Free Electron Laser (FEL)
  - Integrated Topside (INTOP)
- **FY12 Innovative Naval Prototypes:**
  - Autonomous Aerial Cargo Utility System (AACUS)
  - Large Displacement Underwater Unmanned Vehicle (LDUUV)



**Free Electron Laser**

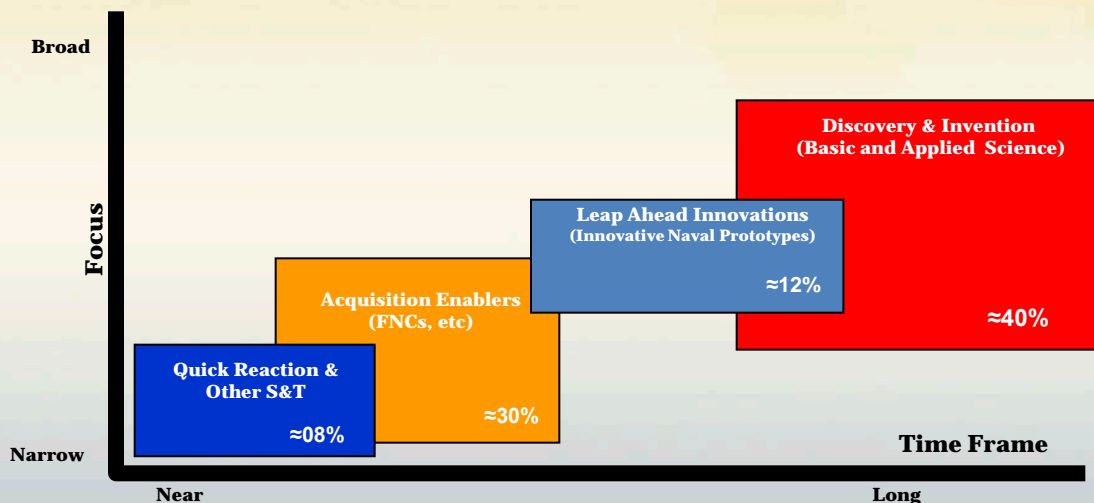


**Electromagnetic Railgun**

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# Naval S&T Investments



## Focus Areas:

- Power and Energy
- Operational Environments
- Maritime Domain Awareness
- Asymmetric & Irregular Warfare
- Information Superiority and Communication
- Power Projection
- Assure Access and Hold at Risk
- Distributed Operations
- Naval Warfighter Performance
- Survivability and Self-Defense
- Platform Mobility
- Fleet/Force Sustainment
- Total Ownership Cost



**Tech Solutions**



**FNCs**



**INPs**



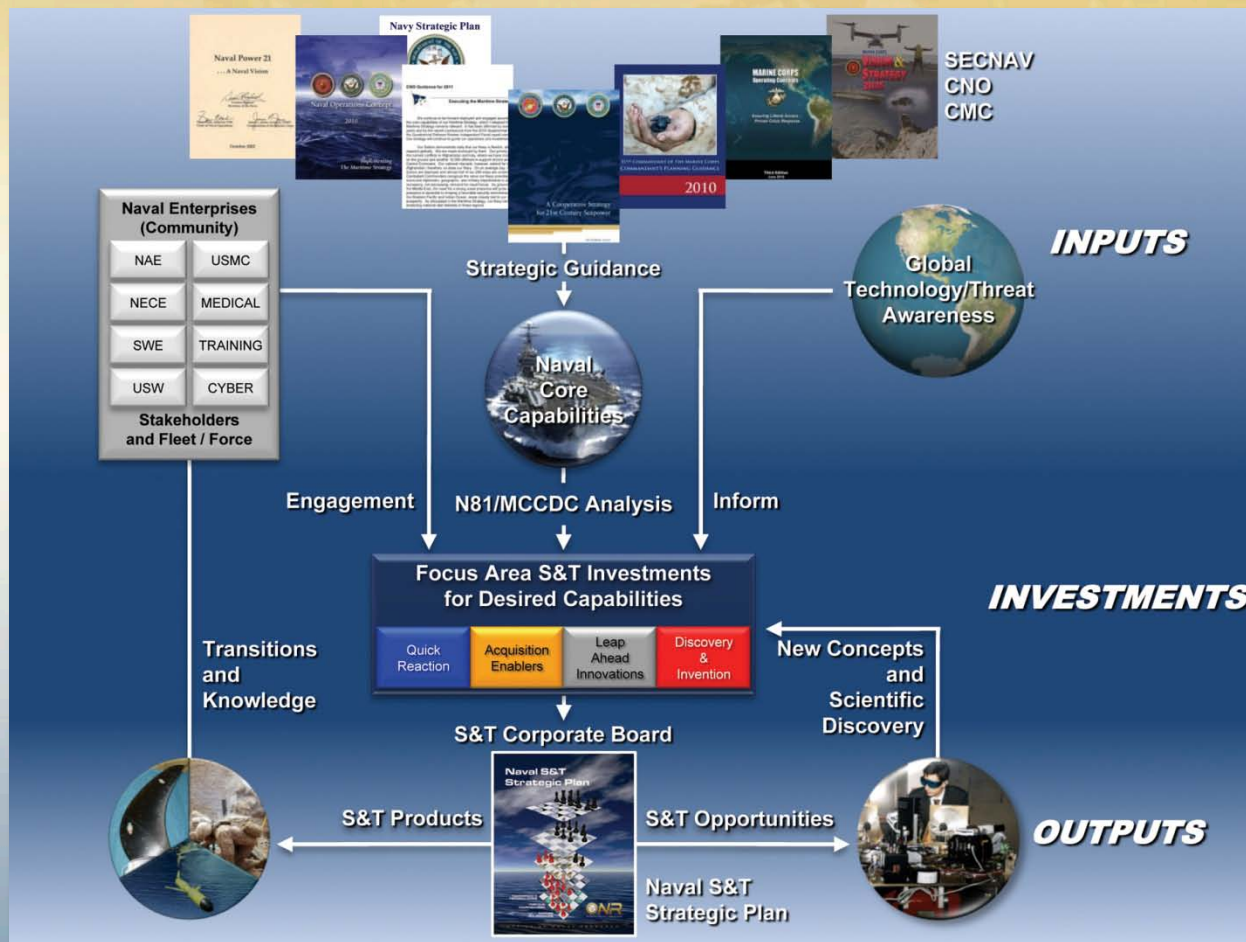
**D&I**



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# Naval S&T Strategic Process



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# New Open Innovation Efforts Across the Federal Government

- Coordinated “Strategy for American Innovation” issued by White House in September 2009. America Competes Act 2011.
- Many of the innovation efforts are focused on expanding access to ideas and problem solvers:
  - **Challenges and Prizes:** Expansion of Challenge and Prize authority to all agencies of the federal government. Clearinghouse website Challenge.gov. Public private partnerships are explicitly encouraged.
  - **Outward Facing Ideation Crowdsourcing Programs:** Being used both for solicitation of ideas and for required public commentary periods for policy changes
  - **Inward Facing Ideation Crowdsourcing Programs:** Generate ideas from employees (DHS, HHS, State Department, Coast Guard)
  - **Open Government Data Sharing:** may not be appropriate for all
  - **Presidential Innovation Fellows :** Just announced
- Examples of initiatives at:
  - <http://www.whitehouse.gov/open/innovations>

# Pay only for (best) results



The screenshot shows the Challenge.gov homepage. At the top, there's a navigation bar with 'HOME' and 'FIND CHALLENGES' buttons. A search bar contains the text 'e.g.: "Apps" or "Health"' and a 'Search' button. To the right, there are links for 'LOG IN', 'SIGN UP', and 'FOLLOW US ON Twitter'. Below the navigation bar, a large dark blue banner features the text 'Challenge.gov is a place where the public and government can solve problems together.' and two buttons: 'Sign Up and Participate' and 'or Learn More'. To the right of the text is an illustration of a person with a lightbulb idea, surrounded by icons for a cube, a notepad, a laptop, and a satellite. Below the banner, the 'Featured Challenges' section displays a challenge titled 'Mapping Dark Matter' created by the National Aeronautics and Space Administration. It includes a description: 'Help us map the dark matter to better understand the invisible components of the Universe.' and a 'View details' link. Below this, a summary bar shows 'Submissions Ending in 3 months', '\$3,000 in prizes', and '16 supporters', with a 'Learn More' button. On the right side, the 'BROWSE GOVERNMENT CHALLENGES' section lists various categories with their respective counts: Defense (11), Economy (3), Education (14), Energy & Environment (19), Health (26), International Affairs (4), Jobs (1), Science & Technology (40), and Personal and Public Safety (14).

**Challenge.gov**  
Government Challenges, Your Solutions

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HOME FIND CHALLENGES

Search e.g.: "Apps" or "Health" Search

Challenge.gov is a place where the public and government can solve problems together.

Sign Up and Participate or [Learn More](#)

**Featured Challenges**

1 2 3 4 5

**Mapping Dark Matter**  
Created by National Aeronautics and Space Administration

Help us map the dark matter to better understand the invisible components of the Universe.

[View details](#)

**Submissions**  
Ending in 3 months

**\$3,000**  
in prizes

**16**  
supporters

[Learn More](#)

**BROWSE GOVERNMENT CHALLENGES**

**Categories**

- Defense (11)
- Economy (3)
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- Jobs (1)
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## Tec^Edge Innovation Pavilion



[Tec^Edge Pavilion Home](#)

[Tec^Edge Challenges](#)

### Welcome to the Tec^Edge Pavilion

This pavilion is sponsored by Tec^Edge, an organization operated by the Wright Brothers Institute (WBI), in partnership with its foundational stakeholder, the Air Force Research Laboratory (AFRL). Tec^Edge operates as a neutral enabler and environment for multidisciplinary joint teams to come together in intense collaborations, which focus on complex problems and challenges.

### About the Air Force Research Laboratory:

AFRL is the Air Force's only organization wholly dedicated to leading the discovery, development, and integration of warfighting technologies for our air, space and cyberspace forces. We trace our roots to the vision of airpower pioneers who understood science as key to air supremacy. The passionate commitment of AFRL people to realize this vision has helped create the world's best air, space and cyberspace force.

### External Links

- [→ AFRL](#)
- [→ Wright Brothers Institute](#)



# NASA NHHPC and CoECI



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## NHHPC Home

- About the NHHPC
- Membership
- Projects
- Events and Activities
- Multimedia
- Resources
- FAQs
- Contact the NHHPC

## Overview



Welcome to the NASA Human Health and Performance Center! This virtual forum was established to connect organizations worldwide interested in collaborating and advancing human health and performance innovations for



## NASA Human Health and Performance Center



**NHHPC Workshop Jan 2011 - Collaborative Innovation: ...**  
 The NHHPC held its first event in January 2011 at the NASA Johnson Space Center. The workshop was themed Collaborative Innovation: Strategies and ...  
[Read More](#)



**Space Center Houston**  
 The mission of Space Center Houston, the gateway to Johnson Space Center and the astronauts, is to be a world-class attraction and center of excellence dedicated to inspiring, entertaining and educating every generation.



**CHAPS**  
 The Centre of Human and Aerospace Physiological Sciences is focused on fundamental questions regarding human physiological function and adaptation in health and disease.

# Focus on Crowdsourcing Ideas

- **Periodic Topical Challenge from Leadership:**
  - Example: HHSinnovates
  - <http://www.hhs.gov/open/innovate/index.html>
- **Continuous Process** (suggestion box model):
  - Example: State Department Sounding Board
- **Mixed:** Ongoing plus Periodic Challenges
  - Example: TSA IdeaFactory
  - <http://IdeaFactory.dhs.gov>
  - **Key Innovations over the suggestion box:**
    - Online commentary from the community
    - Online voting to promote best/most popular ideas
    - Facilitated routing, SME vetting and action by leadership

# What is **Idea** Factory?

- IdeaFactory is a Web-based tool that empowers all TSA employees to:
  - submit ideas,
  - provide comments on how to improve new concepts, and
  - rate ideas that should be recommended for implementation
- It uses social media concepts to harness the “wisdom of the crowds” and expand upon the traditional suggestion box

## IdeaFactory Vision Statement:

Support TSA’s mission by fostering a community that engages employees and encourages collaboration to initiate innovative change.





# Lots of valuable experience...

- Users rate ideas on a scale of 1-5 light bulbs
- Toolbox functionality allows users to collaborate with peers and track ideas
- Reminiscent of open ideation...
- But Internal...
- Moderated...
- Vetted by SME's...
- And feedback

## Pocket-sized Electronic Translator

At the Checkpoint, Customer Service, Communications, Location: MGM  
Submitted By **Jinright, Jackie** on 3/6/2011 10:50:25 AM

My idea is...that we have a hand held electronic translator available to aid the TSOs with language issues that arise in the checkpoint and baggage areas. There are many different kinds and with many languages. Most the the new smart phones have apps for this. Learning a new language is great, but it is a long process. The translator are cheaper than the radios we carry. It would be a win win for both the flying public and the TSOs.

**Jinright, Jackie**



Rate This Idea

**42**

People Rated This Idea

**2.7**

Average Rating

Show Rating History »

**5**

Comments

Leave A Comment »

+

✉️ ❤️ 🔒 ⚠️ SSI

Sort Comments By: **Date Submitted** ▼ | User Name ▲ | Most Helpful ▲ | Most Responses ▲

<p><b>Respass, Leeann</b></p> <p><b>3/11/2011 12:45:57 PM</b></p> <p><a href="#">Report Unmarked SSI</a></p> <p><a href="#">Report Abuse</a></p> <p><a href="#">Respond</a></p> <p><a href="#">Mark As Helpful</a></p> <p><a href="#">Mark As Unhelpful</a></p> <p>0 user(s) marked helpful</p> <p>0 user(s) marked unhelpful</p>	<p>First it will be up to your FSD.. we have them at my airport and don't use them because... well, they don't work. Maybe a better model would but these don't. I've also made cards in 3 languages to help my workforce out, and they do indeed help as would <i>working</i> electronic language translators.</p> <p><b>Respass, Leeann</b></p>
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# ... and Key Lessons Learned

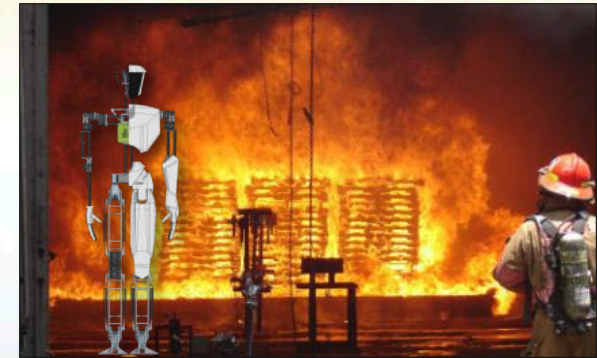
- TSA IdeaFactory Team:
  - Carefully indentify the business need and idea flow process
  - Ensure senior leadership champions effort and provides support
  - Ideation management group reports directly to senior management team
  - Understand the users and their needs and cultivate the community
  - Focus mission and avoid being all things to users; not a forum for ranting
  - Transparency is key – engage employees throughout the entire idea lifecycle
  - Facilitated Ideation is a *program not a website*
  - It's OK to start small and grow
- Gartner Research
  - Do not start an ideation innovation program without CEO level support
  - Senior executive must be accountable for process
  - Best practices are evolving – benchmark and adapt based on research
  - Put most effort towards strategy, focus, process and culture....
  - *Because the technology is the simplest part.*

# ONR SwampWorks

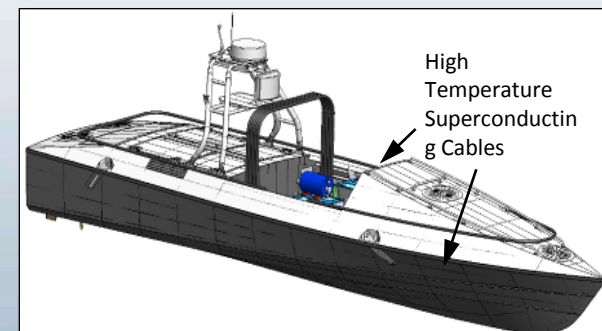
- **Project Parameters:**
  - Project duration < 3 years
  - Must be S&T in nature
  - Develop highly innovative, game-changing technology
- Develop and demonstrate newly invented or recently discovered technologies that address emergent and enduring operational problems in an accelerated timeframe
- Develop prototypes of recent technology breakthroughs for experimentation to satisfy Warfighter requirements
- Pilot disruptive and Open Innovation process and tools with the objective of decreasing the time and cost of producing innovative solutions



**XFC Fuel Cell Powered  
Long Endurance UAS for ISR**



**Damage Control Technologies for the  
21<sup>st</sup> Century (DC-21)**



**High Temperature  
Superconducting Minesweeping System**

User\_19

OUR SCORE:  
1190

Your Innovation Points: 00595  
Group Innovation Points: 00000  
Target: 04900 Innovation Points

# mmoWgli

[Leaderboard](#)[Map](#)[Live Blog](#)[Learn More](#)[PLAY AN IDEA](#)[TAKE ACTION](#)

## MOVE 1: TURN THE TIDE



### *The situation:*

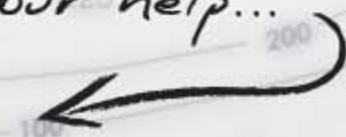
Three pirate ships are holding the world hostage.

Chinese-US relations are strained to the limit and both countries have naval ships in the arena. Humanitarian aid for rig workers and the East African coastline is blocked. The world is blaming the US for plundering African resources.

Merchant ship movement through the area is blocked. Big cities from Mozambique to Djibouti are already feeling the economic repercussions.

Two years ago, at a Navy-sponsored event, a select group of participants set in motion dozens of innovations that could be used in game changing ways in this situation. You were part of this group. Now we need you to put those ideas to work. Help us create a rapid fire brainstorm of the best strategies in this situation.

*We need your help...*



## PLAY A CARD NOW:

Help us identify the worst. Start now, work fast, work together.



# ONR MMOWGLI Pilot

**3** days of gameplay per chapter

**2000** invites **805** registered players **4484** idea cards played

**24** action plans developed **200** simultaneous players

**1000**.mils **300**.edus **250**.govs **450**.coms





# ONR Tech Solutions (HERE!)

- Develops applications of existing and emerging technologies to meet high-interest, near-term Fleet/Force needs
  - Demonstrate prototype solution within 14 months of request
  - 1 year turnaround time, off the shelf technologies
- Solutions with NRE partners and Fleet/Force feedback early and often
- Video: [www.youtube.com/usnavyresearch](http://www.youtube.com/usnavyresearch)
- Requests submitted online at:
  - [www.onr.navy.mil/techsolutions](http://www.onr.navy.mil/techsolutions)



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**TechSolutions Request Form**  
Office of Naval Research

This form is designed for active United States Navy and Marine Corps Personnel only.  
I understand that this form is to be used for unclassified and Non-Naval Nuclear Propulsion Information Issues only.

**User Information:**

\* Rank/Social Title:

\* First Name:

\* Last Name:

\* Email:

\* Phone:

\* Search For Command or Provide Organization:

\* Homeport:

**How did you hear about us?**

**Problem Identification**

Fill in all applicable information and attach any documents, photos, drawings, etc. that may be useful in further identifying your problem and/or idea.

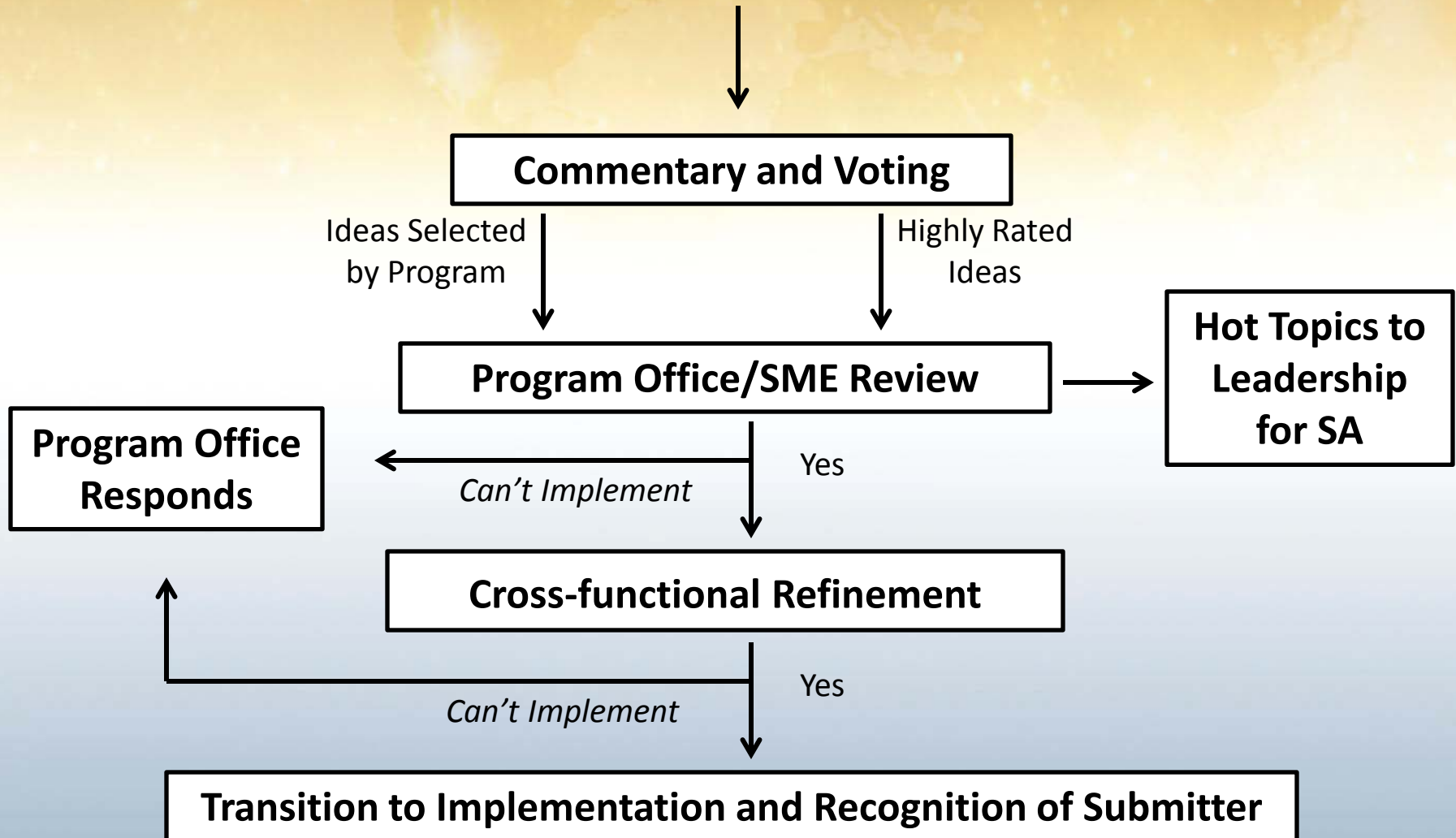
**A. What is your observation and/or problem?**

**B. What does the Solution need to do?**



# Notional ONR Ideation Program

**S&T Challenges to or Ideas from Navy (Fleet, NRE, CTR)**



# Notional Fleet S&T Challenge

ICoC defines a constrained multifaceted challenge topic

CNO issues the challenge to the fleet

**Software:** Solutions and ideas submitted via the web

ICoC sifts out silly or redundant replies and posts ideas

**Software:** Ideas receive comments from the fleet

**Software:** solutions are sieved down using iterative voting

Best idea(s) receive an award from the CNO

## Software

Existing open source government or commercial ideation software hosted by Navy.

This is something Navy should be able to do in-house and often.

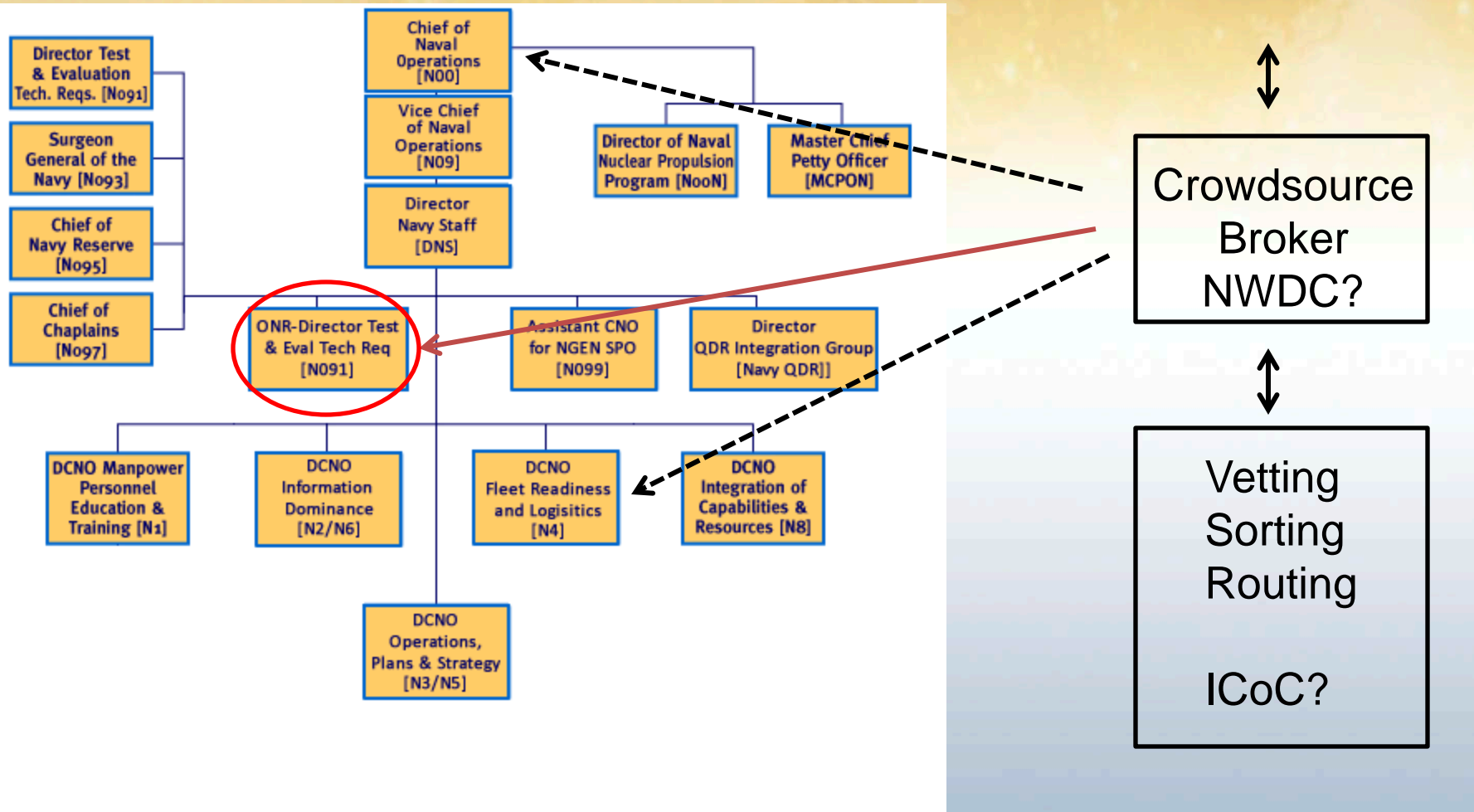
**Hosts:** Navy CIO  
Naval Postgraduate School  
Naval War College  
NWDC

**Examples:** IDEO's open IDEO  
IBM's JAMs  
HHS ideation suite  
State Department Sounding Board

**Or Not:** email and people can work well



# S&T is just one piece



Do we want iTunes or confusion?

# Lead or be Lead

accenture

BCG  
THE BOSTON CONSULTING GROUP

BAIN & COMPANY

Booz | Allen | Hamilton

McKinsey & Company

# Take Home Thoughts

**Innovation is about follow-through and is a strategic advantage**

**You can be proud of ONR as an innovation engine for S&T**

**But innovation for the warfighter is bigger than things**

**Federal innovation is a fast moving target that has not gelled**

**My *opinion* is that you have a window of opportunity to influence and protect how innovation is defined and implemented in your organization....**

**Diversity in innovation practice is critical but government wants a one size fits all solution**

**So get out in front and define it on your terms**

**And who is going to broker the Navy's open innovation process?**



# Contact

CNR RADM Matt Klunder, Director of Innovation Dr. Larry Schuette, and the entire ONR team want to celebrate your innovation success. We are standing by to help.

Chris Fall  
ONR/03I  
[chris.fall@navy.mil](mailto:chris.fall@navy.mil)



# It seems pretty easy at first

[Skip to content](#)



# OPEN GOVERNMENT DIALOGUE



[Submit New Idea](#)

## Categories

- All Ideas
- 1. Transparency
  - Making Data More Accessible
  - Making Government Operations More Open
  - Records Management
- 2. Participation
  - New Strategies and Techniques
  - New Tools and Technologies
  - Federal Advisory Committees
  - Rulemaking
- 3. Collaboration
  - Between Federal Agencies
  - Between Federal, State, and Local Governments
  - Public-Private Partnerships
  - Do-It-Yourself Government
- 4. Capacity Building

*How can we strengthen our democracy and promote efficiency and effectiveness by making government more transparent, participatory, and collaborative?*

June 26, 2009

**The Open Government Dialogue is now closed.** Because of your participation, this dialogue has generated a rich collection of ideas that will shape the President's commitment to making our government more transparent, participatory, and collaborative.

This dialogue represented the first of a three-phase process that is soliciting public input in crafting recommendations on open government. Summaries of the brainstorming that has occurred here, and of subsequent phases in the process, can be found on the **White House Office of Science and Technology Policy Blog**.

Visit the **White House Open Government Initiative** website for more information.

**The National Academy of Public Administration**

On January 21st, the President issued the **Memorandum on Transparency and Open Government**, calling for an unprecedented level of openness in government. In the memorandum, the President outlined three principles for promoting a transparent and open government: transparency, participation, and collaboration. **Now, the President is calling on you to help shape how that commitment is fulfilled.** This online brainstorming session, open from **May 21st to 28th, 2009**, will enable the White House to hear your most important

## Getting Started

Here is a discussion question to get you started:

*What is the best way to change the culture of government to embrace collaboration?*

While you're here:

- ✦ **Search for Ideas** to make sure that your idea or area of interest hasn't already been covered.
- ✦ **Vote, Vote, Vote!** Your votes are critical to ensuring that the best ideas "bubble up" to the top.
- ✦ **Add Your Idea** by clicking on the "New Idea" button to the left.
- ✦ **Spread the Word!** E-mail a link to this website to your network, and invite them to get involved.



# Prepare for the unintended

## Browse Popular Ideas

Recent (4207)

Popular (4207)



I agree

1184

votes



I disagree

LEGAL & POLICY CHALLENGES »

### Remove Marijuana from Schedule I of the Controlled Substances Act

Dear Mr. President, Please direct the DEA to remove marijuana from Schedule I and correctly classify it under the definitions that the Controlled ... more »

88 comments

Submitted by DarthNole 2 years ago



I agree

1001

votes



I disagree

LEGAL & POLICY CHALLENGES »

### Legalize Marijuana And Solve Many Tax Issues / Prison Issues

To legalize marijuana would mean an end to the billions of wasted dollars fighting this "war on drugs". A war, that anyone who grew up in America ... more »

162 comments

Submitted by gbtorsion 2 years ago



I agree

894

votes



I disagree

LEGAL & POLICY CHALLENGES »

### End Imperial Presidency

Leave the White House less imperial than you found it. Appoint an independent prosecutor to prosecute Bush, Cheney, and their top officials ... more »

231 comments

Submitted by david 2 years ago



I agree

LEGAL & POLICY CHALLENGES »

### Stop the "War on Drugs"